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# Employee Stock Ownership and Financial Performance in European Countries: The Moderating Effects of Uncertainty Avoidance and Social Trust

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## Abstract

This study investigates how the effect of employee stock ownership on financial performance may hinge on the diverse cultural and societal contexts of European countries. Based on agency and national culture theories, we hypothesize that the positive relationship between employee stock ownership and return on assets (ROA) is

stronger in those nations with lower uncertainty avoidance and higher social trust. Using a multisource, time-lagged, large-scale dataset of 1,741 firms from 21 countries in Europe, our multilevel, random coefficient modeling analysis found evidence for these hypotheses, suggesting that uncertainty avoidance and social trust serve as important contextual cues in predicting the linkage between employee stock ownership and financial performance. Our supplemental analysis with distinction between the managerial and nonmanagerial employee stock ownership further indicates managerial employee stock ownership has a direct positive effect on ROA. Although nonmanagerial employee stock ownership had a nonsignificant association with ROA, the relationship was positive and significant when uncertainty avoidance was low and social trust was high. This research contributes to the existing literature by illuminating some of the contextual influences altering the effectiveness of employee stock ownership. Our findings also offer practical suggestions for effectively using employee stock ownership.

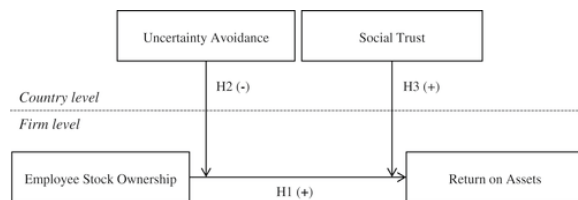
## 1 INTRODUCTION

Employee stock ownership has become an important economic phenomenon in most industrialized countries (Kruse, Freeman, & Blasi, [2010](#); Poutsma, Ligthart, & Veersma, [2006](#)). Employees can earn stock rights through diverse organizational practices, such as owning stocks held by an employee ownership trust, buying stock at a low price via employee stock purchase plans, and receiving stock options as part of their pay. In the United States, the total number of employees participating in employee stock ownership plans (ESOP), the most common form of employee stock ownership, steadily increased from 10,230,425 in 2002 to 14,431,622 in 2015, which covers 11.88% of full-time employees (National Center for Employee Ownership (NCEO), [2018](#)). In Europe, 93.5% of large companies had employee stock ownership schemes in 2017, as compared to 73.0% in 2006. Under such plans, 7,506,827 European employees owned 389 billion Euros of stock in the firms they worked for in 2017 (European Federation of Employee Share Ownership [EFES], [2017](#)).

Corresponding to its prevalence over the globe, considerable research has examined the effects of employee stock ownership (i.e., the degree to which employees own their firm's stock) on firm performance over recent decades. However, significant challenges remain in this field, and one of the key limitations is inconsistent results. Although prior meta-analytic studies (e.g., Doucouliagos, [1995](#); O'Boyle, Patel, & Gonzalez-Mulé, [2016](#)) have indicated that firms can improve their performance with employee stock ownership, the effect sizes reported in those studies were weak (e.g.,  $r = 0.04$  in O'Boyle et al., [2016](#)). Other empirical studies (e.g., E. Kim & Ouimet, [2014](#); Poulain-Rehm & Lepers, [2013](#)) have often reported negative or null findings. In an effort to address this limitation, researchers have increasingly delved into the boundary conditions under which the performance-enhancing effects of employee stock ownership are encouraged or discouraged. For instance, at the organizational level, organizational practices (e.g., employee participation, empowerment) and contexts (e.g., trustworthy climate, span of control) alter the effectiveness of employee stock ownership (Blasi, Freeman, & Kruse, [2016](#); A. M. Robinson & Wilson, [2006](#)). At the country level, institutional contexts such as (de)centralization of pay determination and collective bargaining coverage affect the adoption (Croucher, Brookes, Wood, & Brewster, [2010](#); Kalmi, Pendleton, & Poutsma, [2012](#)) and the effectiveness (Williams, [2018](#)) of employee stock ownership. Although these initial studies have directed scholarly attention to the boundary conditions for the effectiveness of employee stock ownership, this nascent area still demands more investigations of the diverse aspects of internal and external organizational circumstances (Carberry, [2011](#)).

Following this emerging contextual view, this study delves into the role of cultural contexts in predicting the linkage between employee stock ownership and financial performance. Specifically, drawing on national culture theory, which posits that country-level cultural norms and beliefs are powerful forces shaping people's perceptions, dispositions, and behaviors (Hofstede, Hofstede, & Minkov, [2010](#); Markus & Kitayama, [1991](#)), we suggest that the firm-level relationship between employee stock ownership and financial performance will be

stronger in those countries with lower uncertainty avoidance and higher social trust. Our focus on these points among others is based on the theoretically derived constraints that hinder the effectiveness of employee stock ownership in the existing literature. That is, it has long been known that the restricted effectiveness of employee stock ownership is attributable to several factors (Pendleton & Robinson, [2010](#)) such as risk taking (Sanders, [2001](#)) and shirking of stockholders (Blair, Kruse, & Blasi, [2000](#); for a review, see Kaarsemaker, Pendleton, & Poutsma, [2010](#)). Taking into account these dark sides, we regard uncertainty avoidance and social trust as country-level contexts that may motivate or demotivate a workforce entirely from employee stock ownership to contribute to financial performance. Our theoretical model, depicted in Figure [1](#), was tested by a multisource, time-lagged large-scale dataset of 1,741 large listed firms from 21 European countries.



**Figure 1.** Research model

## 2 THEORY AND HYPOTHESES

### 2.1 Impact of employee stock ownership on financial performance

Agency theory has been widely used to understand how and why employee stock ownership positively affects firm performance (Eisenhardt, [1989](#); Sanders, [2001](#)). The agency theory involves two parties engaged in a relationship wherein the principals (e.g., shareholders) delegate work to the agents (e.g., managers and employees) on their behalf (Fama & Jensen, [1983](#)). In this relationship, agents' risk aversion and opportunism are two of the most important contributors to agency costs. Due to their risk aversion and self-interest, agents cannot be relied upon to sacrifice their own self-interest and behave in a manner consistent with the best interest of the principals (Jensen & Meckling, [1976](#)). Instead, agents' self-serving behavior may result in agency problems such as shirking, perquisites consumption, and other opportunistic behaviors (Bethel & Liebeskind, [1993](#); Gibbs, [1993](#); Nyberg, Fulmer, Gerhart, & Carpenter, [2010](#); Shleifer & Vishny, [1997](#); Wright & Ferris, [1997](#)). Hence, agency theorists have highlighted the role of incentive schemes in addressing such agency costs (Bethel & Liebeskind, [1993](#); Eisenhardt, [1989](#)).

In accordance with the core principles of agency theory, employee stock ownership, in which a portion of employee income is tied directly to firm profitability, has been known to suppress self-centered behaviors in the workforce (Demsetz & Lehn, [1985](#); Jensen & Meckling, [1976](#); Palmer & Wiseman, [1999](#)) by mitigating employees' tendency to underinvest in firm-specific human capital (Wang, He, & Mahoney, [2009](#)) as well as making employees' risk preferences similar to those of other shareholders (e.g., firm owners; Beatty & Zajac, [1994](#)). In addition to the economic view of agency theory, employee stock ownership yields psychological effects such as employees' sense of ownership (Pierce, Rubenfeld, & Morgan, [1991](#)) and identification with organizational goals (Buchko, [1992, 1993](#); French & Rosenstein, [1984](#); Klein, [1987](#); Kruse et al., [2010](#); Long, [1980](#)), which elicit productive behavior from the workforce and ultimately lead to better firm performance. In this vein, past studies have largely reported a positive link between employee stock ownership and financial performance. For example, Blasi, Conte, and Kruse ([1996](#)) found firms with more than 5% employee stock ownership achieved a higher growth of return on assets (ROA), return on equity (ROE), and profit margin than companies that did not. Stretcher, Henry, and Kavanaugh ([2006](#)) also demonstrated that firms with ESOP had a 5.5% higher ROA than those without ESOP companies. Recently, the meta-analytic review

by O'Boyle et al. (2016) confirmed employee stock ownership had a small but significantly positive relationship with firm performance ( $r = .04$ ).

In line with these theoretical arguments and empirical findings, our investigation departs from the positive relationship between employee stock ownership and financial performance. It is worthwhile retesting this link given the inconclusive and U.S.-based results in the literature. For example, Poulain-Rehm and Lepers (2013) found employee stock ownership is negatively related to financial performance in 163 French firms. Taking into account that the unexpected results might be attributed to cultural differences between France in their research and the United States in most prior research, the authors called for more studies testing the impact of employee stock ownership on firm performance in non-U.S. countries, which is timely because 66.7% of empirical studies included in the meta-analytic review by O'Boyle et al. (2016) were drawn from U.S. samples. Thus:

*Hypothesis 1: Employee stock ownership is positively related to financial performance in European countries.*

## 2.2 Country-level moderators on the effectiveness of employee stock ownership

Country-level differences serve as significant boundary conditions in predicting variation in the effectiveness of organizational practices across diverse cultural and societal contexts (Jiang, Colakoglu, Lepak, Blasi, & Kruse, 2015; Rabl, Jayasinghe, Gerhart, & Kühlmann, 2014). According to national culture theory, *culture* is defined as “the collective programming of the mind which distinguishes the members of one human group from another” (Hofstede et al., 2010, p. 6) and as a multidimensional construct representing unique patterns of cultural values across countries (Hofstede et al., 2010). While Hofstede (1980) initially identified four cultural dimensions (i.e., power distance, uncertainty avoidance, individualism–collectivism, and masculinity–femininity), subsequent studies have agreed there are many other cultural values, beliefs, and norms and thus have encouraged researchers to explore those beyond the seminal work by Hofstede (Beugelsdijk, Kostova, & Roth, 2017; Kirkman, Lowe, & Gibson, 2006, 2017; Leung & Morris, 2015). In addition, national culture has been conceptualized as a shared property of individuals within countries at the national level (Hofstede, 2001). Cultural values can vary across individuals within countries (i.e., within-country variation; Steel & Taras, 2010) because individual cultural values are determined by their country's culture as well as their own characteristics (Chao & Moon, 2005). However, from a multilevel perspective, cultural values at the national level are an emergent phenomenon resulting from common values, meanings, and norms (Kozlowski & Klein, 2000) advocated by a majority of individuals in general.

Taking into account the between-country differences of cultural values (Hofstede et al., 2010; House, Hanges, Javidan, Dorfman, & Gupta, 2004; Markus & Kitayama, 1991; Steenkamp, 2001), we attempt to identify some of the national contexts that may influence the work motivation of employees in an aggregate form under employee stock ownership. From a cross-cultural management perspective, it is vital to examine how the national-level contexts interact with organizational practices to predict firm-level processes or outcomes (Gelfand, Erez, & Aycan, 2007). In a similar vein, cultural and societal contexts are key factors in understanding the adoption and the effectiveness of compensation practices (Schuler & Rogovsky, 1998; Townsend, Scott, & Markham, 1990) and ownership decisions (Hennart & Larimo, 1998) because they are likely to affect how employees react to their compensation practices (Gerhart & Fang, 2015) and thereby their work outcomes (Caramelli & Briole, 2007; Janssens, Brett, & Smith, 1995; Newman & Nollen, 1996). Given that employee stock ownership can engender the risk aversion and free-riding problems of a workforce, which potentially hinder its effectiveness, we propose that country-level differences in terms of uncertainty avoidance and social trust will determine the effect of employee stock ownership on financial performance.

### 2.3 Uncertainty avoidance

Using survey data collected from IBM employees from 40 countries, Hofstede (**1980**) identified uncertainty avoidance as an important cultural difference. Analyzing a sample of 17,730 managers from 951 organizations in 62 countries, the Global Leader and Organizational Effectiveness (GLOBE) survey further verified that uncertainty avoidance is an essential social construct that varies across countries (House et al., **2004**).

Uncertainty avoidance denotes the extent to which a culture programs its members to feel either uncomfortable or comfortable in unstructured situations (Hofstede, **2001**). In a country with a high uncertainty avoidance culture, people generally have low tolerance for uncertainty and are driven to avoid risky situations. In contrast, in a low uncertainty avoidance culture, people generally have a high tolerance for ambiguity and take greater risks (Hofstede et al., **2010**).

We suggest that country-level uncertainty avoidance is an important moderator for the firm-level relationship between employee stock ownership and financial performance. In general, employees are likely to perceive that stock-based compensation practices are risky because they have to invest an amount of their financial capital in their company in which they have already invested their human capital (Caramelli & Briole, **2007**). Moreover, it is uncertain whether their work outcomes enhance firm profitability and eventually lead to increased stock price because these distal firm-level outcomes are a function of a myriad of causes influenced by each employee's work effort, management capability, and other exogenous factors. Thus, the perceived degree of risk associated with stock holding can hamper the incentive effect of stock ownership (Beatty & Zajac, **1994**; Bloom & Milkovich, **1998**; Gray & Cannella, **1997**), because people consider both risk and return when making investment decisions (Ganzach, **2000**; Tyebjee & Bruno, **1984**). For example, if an employee perceives that the risks associated with employee stock ownership are greater than the expected return, the employee may refuse to reduce agency costs "by withholding effort or taking evasive actions," and this reaction can be detrimental to firm profitability (Miller, Wiseman, & Gomez-Mejia, **2002**, p. 746).

This argument can be more pronounced for firms in countries with a high level of uncertainty avoidance. Although employee stock ownership provides employees with the same level of incentives to behave in accordance with the interests of the shareholders, people in a high uncertainty-avoidance culture may perceive a higher risk for employee stock ownership because they generally have low tolerance for uncertainty (Furnham & Ribchester, **1995**; Hofstede et al., **2010**). Consequently, employees working for firms in high uncertainty-avoidance cultures may tend to be less motivated by their wealth creation opportunities under employee stock ownership, and the less-motivated workforce may negatively affect financial performance. However, the workforce of firms in countries with a low level of uncertainty avoidance may suffer less from the same problems because employees in those contexts are largely driven to perceive that uncertain situations are desirable, challenging, and interesting (Furnham & Ribchester, **1995**; Hofstede et al., **2010**). Indeed, Debus, Probst, König, and Kleinmann (**2012**) found uncertainty in the workplace (i.e., job insecurity) had a less detrimental effect on employee outcomes in countries with a low uncertainty-avoidance culture. As such, the incentive and motivational effects of employee stock ownership are more likely to be fully activated among employees working for firms in low uncertainty-avoidance cultures and thereby better channel their work efforts into financial performance. Thus:

*Hypothesis 2: Country-level uncertainty avoidance moderates the relationship between employee stock ownership and financial performance so that the relationship is more positive in countries characterized by low uncertainty avoidance.*

### 2.4 Social trust

We define *social trust* as the average level of generalized trust of people in a country. Generalized trust is a person's belief or perception that another's future action will not be detrimental to their own interest

(Fukuyama, [1995](#); Madhok, [1995](#); S. L. Robinson, [1996](#)). The general propensity to trust differs across individuals (Rotter, [1971](#)) and there are significant differences in the average levels of generalized trust (i.e., social trust) across countries (Ferrin & Gillespie, [2010](#); Huff & Kelley, [2003](#)). The literature has acknowledged that social trust is a valuable social resource and has an important influence on human behavior (Putnam, [2000](#)). In particular, social trust can be a source of competitive advantage by reducing transaction costs such as costs of negotiation and the level of conflict (Barney & Hansen, [1994](#); Dyer & Chu, [2003](#); Zaheer, McEvily, & Perrone, [1998](#)). A low level of social trust drives people in the country to expect that others may behave opportunistically, and therefore, they are likely to prefer self-interested behavior to avoid being exploited in social interactions by any self-centered others (Kollock, [1994](#)).

We propose social trust is another important boundary condition for the effectiveness of employee stock ownership due to the potential threats of free riding (Blasi et al., [2016](#); Weitzman & Kruse, [1990](#)). As individuals gain only  $1/N$ th ( $N$  = number of group members) of the payoff from their efforts, it is probable that free riders may exploit such collective working and rewarding situations by shirking, even while others exert effort to improve firm performance. To deal with shirking, some employees may step up and monitor their coworkers to enforce the work norm (Kruse et al., [2010](#)). In situations where the monitoring activity is impractical (i.e., large groups), some employees might be willing to step back to avoid being exploited by any potential free riders.

This claim can be salient for firms in countries with a low level of social trust where employees are likely to expect others to behave opportunistically. Although employee stock ownership is considered vital for achieving principal-agent goal alignment, employees working for firms in countries where people are usually concerned about others' opportunistic behaviors are likely to become free riders, which can negatively affect firms' bottom line. In contrast, firms in countries where people typically trust each other and believe that others are responsible and dependable may suffer less from the same problems because their workforce is likely to be more committed to their roles as a principal. Indeed, Blasi et al. ([2016](#)) found firm-level trust moderated the relationship between shared capitalism practices, including employee stock ownership as a subset, and firm performance, which underpins our claim that social trust at the country level may moderate the link between employee stock ownership and financial performance. Thus:

*Hypothesis 3: Country-level social trust moderates the relationship between employee stock ownership and financial performance so that the relationship is more positive in countries characterized by high social trust.*

### 3 METHODS

#### 3.1 Data

We tested the proposed model by analyzing a multisource, time-lagged large-scale dataset of large publicly traded companies in Europe. We gathered various data from four different sources. First, the data on employee stock ownership were taken from the European Employee Ownership database compiled by the EFES. The EFES, an international nonprofit located in Brussels, was set up in 1998 with the support of the European Commission to promote the development of employee stock ownership in European countries. To provide information on these financial participation schemes across the European countries, the EFES initiated extensive data collection on employee stock ownership beginning in 2006. The database provides detailed information about employee stock ownership in the large European public companies whose market capitalization is 200 million Euros or more and nonlisted companies employing 100 employees or more whose employees own 50% or more of the firm. In 2008, for example, the survey included 2,533 companies from 29 European countries. These companies employed 32.4 million people in total, which is almost 30% of all European employees. Among them, 2,291 were publicly traded. The data are based on information produced by companies themselves in financial reports, which are subject to external audit. Second, ROA and other financial data on the firms were gathered from the

Worldscope database, which contains historical financial data of publicly traded companies around the world. Third, country-level uncertainty avoidance was taken from Hofstede's cultural dimensions (Hofstede et al., [2010](#)). Fourth, country-level social trust was taken from the Organisation for Economic Co-operation and Development (OECD) ([2011](#)) social indicators. Drawing on the data from these various sources, we constructed our sample of 1,741 publicly traded companies in 21 countries in 2008, which is the only year that all the data sources were available for this study. By employing these four sources, we were able to compile and analyze an objective and unique dataset. The composition of our samples is described in Table [1](#).

**Table 1.** Uncertainty avoidance, social trust, and employee stock ownership by country

Country	Uncertainty avoidance	Social trust	Employee stock ownership	Observations
Austria	70	62	.08	33
Belgium	94	69	.05	49
Czech	74	56	.00	3
Denmark	23	89	.03	60
Estonia	60	72	.01	4
Finland	59	86	.03	61
France	86	56	.13	231
Germany	65	61	.06	197
Great Britain	35	69	.07	451
Greece	112	40	.09	53
Hungary	82	47	.01	10
Ireland	35	56	.06	30
Netherlands	53	80	.05	62
Norway	50	88	.06	83
Poland	93	47	.08	56
Portugal	104	38	.04	22
Slovakia	51	47	.00	3
Slovenia	88	53	.03	12
Spain	86	62	.04	79
Sweden	29	84	.04	110
Switzerland	58	74	.06	132

*Note.* Uncertainty avoidance and social trust are adopted from Hofstede et al. ([2010](#)) and OECD ([2011](#)), respectively. The high values represent high uncertainty avoidance and high social trust. Employee stock ownership represents the mean proportion of stocks outstanding held by employees in the sample.

## 3.2 Measures

### 3.2.1 Financial performance

We calculated ROA as net income over total assets. ROA is a popular measure of financial performance in management research (Richard, Devinney, Yip, & Johnson, [2009](#)) and appropriately represents the profitability of any firm in which shareholders are interested (Hull & Rothenberg, [2008](#)). In this study, a 1-year time-lagged ROA in 2009 was used as a dependent variable to mitigate a potential simultaneity problem.

### 3.2.2 Employee stock ownership

We measured the degree to which firms implemented employee stock ownership by considering the proportion of stocks outstanding held by both managerial and nonmanagerial employees. This information included stocks held directly by employees as well as indirectly on their behalf by collective bodies (e.g., foundations, funds, and trusts). While stock options (e.g., Save as You Earn in the United Kingdom) were not included, stocks held via the exercise of such options were included in the data pool. This operationalization is commonly used in the



literature because it reflects the level of interest alignment between employees and shareholders (Blasi et al., [1996](#); E. Kim & Ouimet, [2014](#); Richter & Schrader, [2017](#)).

### 3.2.3 Uncertainty avoidance

We used the uncertainty avoidance measure (see Table [1](#)) identified by Hofstede et al. ([2010](#)). In the cross-cultural management literature, researchers have typically measured the uncertainty avoidance of countries by applying Hofstede's cultural dimensions (Hofstede et al., [2010](#)) or the GLOBE project (House et al., [2004](#)). The GLOBE project, however, provided only 17 countries' cultural values for our particular dataset. Furthermore, the GLOBE survey was conducted in 2004, which had no overlap with the employee stock ownership data from EFES conducted since 2006. However, Hofstede et al. ([2010](#)) provided most of the countries' cultural values in our sample and incorporated the survey conducted in 2008. Hofstede ([2001](#)) also demonstrated the reliability and validity of the countries' diverse cultural value measures. A high score of uncertainty avoidance drives people in a particular society to feel threatened by unknown or uncertain situations. Examples of countries in our sample with high levels of uncertainty avoidance were Greece, Portugal, and Belgium, whereas those with low levels of uncertainty avoidance were Denmark, Sweden, and Great Britain.

### 3.2.4 Social trust

For social trust, we used the OECD social indicator that was originally from the survey administered in 2008 (OECD, [2011](#)). In the survey, respondents were asked to answer the following question, "Generally speaking, would you say that most people can be trusted or that you need to be very careful in dealing with people?" using a 10-point scale with the lowest category being "can't be too careful" (1) and the highest "most people can be trusted" (10). The social trust index is the percentage of respondents who selected 6 or higher (OECD, [2011](#)). A high score of social trust denotes that people in a particular society generally trust other people. It has been generally known that single-item measures are limited (Kline, [2005](#)) for estimating internal consistency reliability and validity. However, single-item measures may be well used (Judge & Ferris, [1993](#)) when their operationalization is narrow enough to indicate a precise response (Sackett & Larson Jr, [1990](#)). Indeed, researchers have argued that the single-item social trust measure validly "taps feelings about the trustworthiness of the generalized other" (Putnam, [2000](#), p. 137). As such, the measure employed in our study has been most widely considered in prior research that has investigated the countries' level of social trust (Knack & Keefer, [1997](#); Qu & Yang, [2015](#); Rao, Pearce, & Xin, [2005](#)). Examples of countries in our sample with high levels of social trust were Denmark, Norway, and Finland, whereas those with low levels of social trust were Portugal, Greece, and Hungary.

### 3.2.5 Control variables

We controlled for several variables that might affect our hypothesized relationships between the variables of interest. Our set of control variables included firm size (a natural logarithm of the number of full-time employees), which could affect the effectiveness of ESOP (E. Kim & Ouimet, [2014](#)). Also, industry memberships (two-digit Standard Industrial Classification [SIC] codes) were controlled for because industry performance tends to influence the average profits of firms in that industry (Kroll, Walters, & Le, [2007](#); Zahra, [1996](#)). We also included union density and capitalization to control for the institutional backgrounds of countries (Croucher et al., [2010](#); Kalmi et al., [2012](#); Williams, [2018](#)). Finally, we controlled for debt ratio due to the potential differences in the interests of creditors and shareholders. Specifically, creditors might focus more on a firm's stability and survival than profitability, which then might influence that firm's corporate governance mechanism and financial performance (Gedajlovic & Shapiro, [2002](#)).

## 3.3 Analytical approach

Given our theoretical model where firms were nested within focal countries, we calculated the intraclass correlation coefficient (1) for ROA, which appeared to be 0.01, suggesting that country explained 1% of variance

in ROA. The results imply there might be no need to use hierarchical linear modeling (HLM) because a simpler ordinary least squares (OLS) might be more cost effective. However, even when the proportion of the total variance in a dependent variable accounted for by groups is very small, scholars have recommended using HLM to test cross-level interactions due to the high type II error rate (Aguinis, Gottfredson, & Culpepper, [2013](#); Farmer, Van Dyne, & Kamdar, [2015](#); LaHuis & Ferguson, [2009](#); Snijders & Bosker, [2012](#)). Given our key hypotheses are theory-based, cross-level interactions rather than country-level direct effects, we thus proceeded to use HLM. As a robustness test, we also conducted OLS and found the same patterns of findings as reported in this study. Detailed results are available upon request. HLM not only estimates model coefficients at each level, but it also predicts the random effects associated with each sampling unit at every level. The Level-1 (firm-level) model for ROA was thus:

$$ROA_{ij} = \beta_{0j} + \beta_{1j}ESO + \beta_{2j}FIRMSIZE + \beta_{3j}DEBTRATIO + \beta_{xj}DUMMY_{ij}(Industry) + r_{ij}.$$

where  $ROA_{ij}$  is the ROA value of firm  $i$  in country  $j$  and  $\beta_{0j}$  is the intercept.  $\beta_{1j}$ ,  $\beta_{2j}$ ,  $\beta_{3j}$ , and  $\beta_{xj}$  are regression coefficients for employee stock ownership, firm size, debt ratio, and the industry dummy variables, respectively.  $r_{ij}$  is the firm-level error term. The Level-2 (country-level) model was:

$$\beta_{0j} = \gamma_{00} + \gamma_{01}UA/TRUST_j + \gamma_{02}UNION_j + \gamma_{03}CAPITAL_j + U_{0j}$$

$$\beta_{1j} = \gamma_{10} + \gamma_{11}UA/TRUST_j + U_{1j}$$

$$\beta_{2j} = \gamma_{20} + U_{2j}$$

$$\beta_{3j} = \gamma_{30} + U_{3j}$$

$$\beta_{xj} = \gamma_{x0} + U_{xj},$$

where  $\beta_{0j}$  is the intercept of the firm-level model, which depends on a country's uncertainty avoidance ( $UA_j$ ), social trust ( $TRUST_j$ ), union density ( $UNION_j$ ), and capitalization ( $CAPITAL_j$ ).  $\beta_{1j}$  is the coefficient of the firm-level employee stock ownership, which also depends on a country's uncertainty avoidance and social trust.  $U_{0j}$ ,  $U_{1j}$ ,  $U_{2j}$ ,  $U_{3j}$ , and  $U_{xj}$  are country-level error terms.

We first tested hypothesis 1 by regressing ROA on the firm-level predictors. We then tested cross-level interactions for hypotheses 2 and 3 by regressing the Level-1 slope (i.e., the relationship between employee stock ownership and ROA) onto country-level moderators (i.e., uncertainty avoidance and social trust). We group-mean centered the predictors, as this process is the recommended centering approach when cross-level interactions are involved (Hofmann, Griffin, & Gavin, [2000](#)). Finally, we performed a simple slope analysis (Aiken & West, [1991](#)) to examine whether the slopes were significantly different from zero.

## 4 RESULTS

### 4.1 Descriptive statistics and correlations

Table [2](#) shows the descriptive statistics and correlations for all the variables in the study where the organizational variables were measured at Level 1 and national contexts were treated at Level 2. ROA ( $t + 1$ ) was positively correlated with employee stock ownership ( $r = .07$ ,  $p < .05$ ). In terms of country-level variables, uncertainty avoidance was positively correlated with employee stock ownership ( $r = .09$ ,  $p < .01$ ) but was not significantly correlated with ROA ( $r = .01$ , non-significant [n.s.]). Meanwhile, social trust was negatively correlated with employee stock ownership ( $r = -.11$ ,  $p < .01$ ) but was not significantly correlated with ROA ( $r = .00$ , n.s.).

**Table 2.** Means, *SD*, and correlations among variables

Variables	Mean	SD	1	2	3	4	5	6	7
1. ROA (t + 1)	2.67	11.24							
2. Employee stock ownership	.07	.14	.07**						
3. Firm size (log)	8.04	1.95	.15**	-.17**					
4. Debt ratio	.27	.20	-.04*	-.02	.04				
5. Union density	29.54	20.03	-.01	-.12**	-.13**	.09**			
6. Capitalization	60.28	43.10	.03	-.01	-.02	-.13**	.18		
7. Uncertainty avoidance	67.00	25.11	.01	.09**	.09**	.06*	-.45*	-.20	
8. Social trust	63.55	15.72	.00*	-.11**	-.11**	.01	.66**	.46*	-.69**

Note.  $N = 1,741$  observations; 21 countries. ROA: return on assets.

\*\*  $p < .01$

\*  $p < .05$ .

We found a relatively high and negative correlation between uncertainty avoidance and social trust ( $r = -.69$ ,  $p < .01$ ), which was similar to the prior research (e.g.,  $r = -.68$ ,  $p < .01$  in Qu & Yang, **2015**). One may suggest the two variables are the same wine in different bottles given the relatively high correlation. Although the correlation between the two variables is somewhat high, scholars have suggested they are conceptually distinct: uncertainty avoidance refers to how people *feel* (either comfortable or uncomfortable) *in uncertain situations* (Hofstede et al., **2010**), whereas social trust refers to people's *belief* (either trustworthy or untrustworthy) *in other people* (Putnam, **1993, 2000**). Due to this distinction and our aforementioned theoretical reasoning, although some aspects are overlapped, it is worthwhile to examine the moderating effects of these two variables separately.

## 4.2 Testing the hypotheses

The results of the multilevel analyses with robust standard errors (SEs) are shown in Table 3. In Model 1, only the control variables (i.e., firm size, debt ratio, industry dummies, union density, and capitalization) were included. In Model 2, uncertainty avoidance and social trust were included. None of the country-level variables had a significant association with ROA. Next, we tested the main effect of employee stock ownership on financial performance.

**Table 3.** Results of hierarchical linear modeling

Variables	ROA (t + 1)				
	Model 1	Model 2	Model 3	Model 4	Model 5
Intercept	-.01 (3.02)	-2.56 (3.70)	-3.68 (3.91)	-3.79 (3.70)	-4.02 (3.84)
Firm-level control variables					
Firm size (log)	.74** (.24)	.74** (.24)	.85** (.24)	.86** (.24)	.85** (.24)
Debt ratio	-2.76 (1.52)	-2.89 (1.49)	-2.86 (1.47)	-2.78 (1.45)	-2.85* (1.45)
Industry fixed effects	Yes	Yes	Yes	Yes	Yes
Country-level control variables					
Union density	.00 (.01)	-.01 (.02)	.00 (.02)	.00 (.02)	.00 (.02)
Capitalization	.00 (.00)	.00 (.00)	.00 (.01)	.00 (.00)	.00 (.00)
Country-level moderator variables					
Uncertainty avoidance		.01 (.01)	.01 (.01)	.01 (.01)	.01 (.01)
Social trust		.04 (.03)	.04 (.03)	.04 (.03)	.04 (.03)
Firm-level independent variable					
ESO			7.24* (3.03)	8.82** (1.93)	8.18** (2.73)
Cross-level interactions					
ESO x UA				-.23** (.04)	

ESO x ST					.27* (.13)
-2 Log Likelihood	13,176.39	13,175.62	13,160.97	13,151.81	13,158.26
Pseudo R <sup>2</sup>	.30	.30	.34	.35	.35

Note.  $N = 1,741$  observations; 21 countries. ESO: employee stock ownership; ROA: return on assets; ST: social trust; UA: uncertainty avoidance.

\*\*  $p < .01$

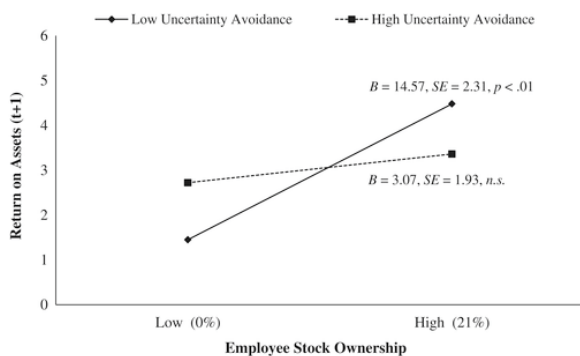
\*  $p < .05$ .

Hypothesis 1 predicted a positive association between employee stock ownership and financial performance. As shown in Model 3, employee stock ownership was significantly related to subsequent ROA ( $B = 7.24$ ,  $SE = 3.03$ ,  $p < .05$ ). The addition of employee stock ownership explained significant additional variance in ROA (pseudo  $R^2 = .34$ ,  $\Delta R^2 = .04$ ,  $p < .01$ ). Therefore, Hypothesis 1 is supported.

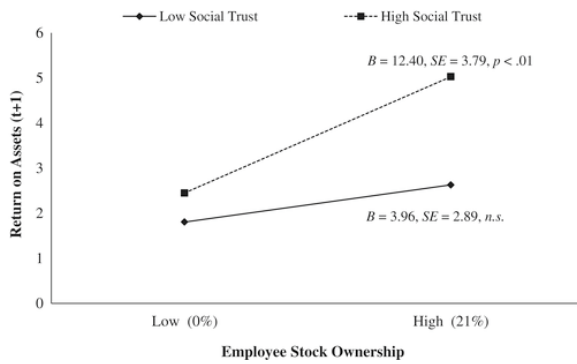
Hypothesis 2 expected uncertainty avoidance to exert a negative moderating effect on the positive relationship between employee stock ownership and ROA. As viewed in Model 4 of Table 3, the cross-level interaction term between employee stock ownership and uncertainty avoidance was significantly negative ( $B = -.23$ ,  $SE = .04$ ,  $p < .01$ ), indicating that the positive relationship between employee stock ownership and ROA becomes weaker when uncertainty avoidance is higher rather than when it is low. The addition of the cross-level interaction term explained significant additional variance in ROA (pseudo  $R^2 = .35$ ,  $\Delta R^2 = .01$ ,  $p < .05$ ). These results provide support for Hypothesis 2.

Hypothesis 3 posited that social trust strengthens the positive relationship between employee stock ownership and ROA. As seen in Model 5 of Table 3, the cross-level interaction between employee stock ownership and social trust was positive and significant ( $B = .27$ ,  $SE = .13$ ,  $p < .05$ ). The addition of the cross-level interaction term explained significant additional variance in ROA (pseudo  $R^2 = .35$ ,  $\Delta R^2 = .01$ ,  $p < .05$ ). These results suggest that the positive relationship between employee stock ownership and ROA becomes stronger when social trust is higher rather than when it is low. Therefore, Hypothesis 3 was supported.

To ascertain these results, we plotted the interaction effects in Figures 2 and 3, following the procedures suggested by Aiken and West (1991). In general, these interaction effects are plotted at one  $SD$  above and one  $SD$  below the mean for the independent variable. However, our independent variable (i.e., employee stock ownership) had a mean of .07 and a  $SD$  of .14, which makes one  $SD$  below the mean a negative. As employee stock ownership cannot have a negative value, we defined the low level of employee stock ownership as zero (.00), while the high level of employee stock ownership represents one  $SD$  above the mean (.21).



**Figure 2.** Interaction effect of employee stock ownership and uncertainty avoidance on subsequent return on assets (ROA)



**Figure 3.** Interaction effect of employee stock ownership and social trust on subsequent return on assets (ROA)

The plots visually confirmed that a firm's ROA is positively associated with employee stock ownership. In addition, the slope is steeper when a firm resides in a country that has low scores on the cultural dimension of uncertainty avoidance, as shown in Figure 2. Specifically, the relationship between employee stock ownership and ROA was significantly positive when uncertainty avoidance was low ( $B = 14.57$ ,  $SE = 2.31$ ,  $p < .01$ ) but nonsignificant when uncertainty avoidance was high ( $B = 3.07$ ,  $SE = 1.93$ , n.s.). Similarly, Figure 3 shows that the positive association between employee stock ownership and financial performance is stronger in a country with a high level of social trust. The relationship between employee stock ownership and ROA was significantly positive when social trust was high ( $B = 12.40$ ,  $SE = 3.79$ ,  $p < .01$ ), but it was nonsignificant when social trust was low ( $B = 3.96$ ,  $SE = 2.89$ , n.s.). Taken as a whole, these results support both hypotheses 2 and 3.

#### 4.3 Supplemental analysis

As our dataset consisted of large, listed companies in Europe, our findings may have been influenced by managerial employee owners who may have a more substantial stake than nonmanagerial employee owners. To address this concern, we differentiated managerial employee stock ownership (mean = .06) and nonmanagerial employee stock ownership (mean = .01) and then retested our hypothesized relationships with two different predictors. In our data, managerial (nonmanagerial) employee stock ownership is defined as the proportion of stocks outstanding held by executive members (nonexecutive employees). As seen in Model 3 of Table 4, we found managerial employee stock ownership has a significant and positive association with subsequent ROA ( $B = 6.90$ ,  $SE = 2.91$ ,  $p < .05$ ), and we did not find the same result for nonmanagerial employee stock ownership ( $B = 7.26$ ,  $SE = 5.97$ , n.s.). Next, we tested the moderating effects of uncertainty avoidance and social trust. The interaction term between managerial employee stock ownership and uncertainty avoidance was statistically significant ( $B = -.19$ ,  $SE = .04$ ,  $p < .01$  in Model 4). However, we found a nonsignificant interaction effect between managerial employee stock ownership and social trust ( $B = .22$ ,  $SE = .13$ , n.s. in Model 5) to affect ROA. It was indicated that nonmanagerial employee stock ownership significantly interacts with both uncertainty avoidance ( $B = -.67$ ,  $SE = .18$ ,  $p < .01$  in Model 4) and social trust ( $B = 1.02$ ,  $SE = .31$ ,  $p < .01$  in Model 5) to affect ROA.

**Table 4.** Results of supplemental analysis

Variables	ROA (t + 1)				
	Model 1	Model 2	Model 3	Model 4	Model 5
Intercept	-.01 (3.02)	-2.56 (3.70)	-3.59 (3.85)	-3.84 (3.62)	-4.08 (3.76)
Firm-level control variables					
Firm size (log)	.74** (.24)	.74** (.24)	.85** (.24)	.88** (.24)	.87** (.24)
Debt ratio	-2.76 (1.52)	-2.89 (1.49)	-2.86 (1.48)	-2.80 (1.46)	-2.82* (1.48)
Industry fixed effects	Yes	Yes	Yes	Yes	Yes
Country-level control variables					

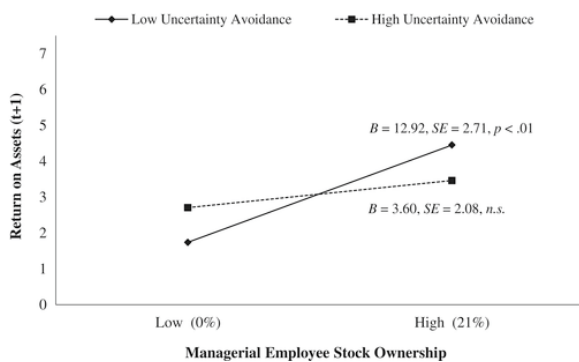
Union density	.00 (.01)	-.01 (.02)	.00 (.02)	.00 (.02)	.00 (.02)
Capitalization	.00 (.00)	.00 (.00)	.01 (.01)	.00 (.00)	.00 (.00)
Country-level moderator variables					
Uncertainty avoidance		.01 (.01)	.01 (.01)	.01 (.01)	.01 (.01)
Social trust		.04 (.03)	.04 (.03)	.04 (.03)	.04 (.03)
Firm-level independent variable					
Managerial ESO			6.90* (2.91)	8.26** (2.20)	7.72** (2.71)
Nonmanagerial ESO			7.26 (5.97)	6.02* (3.03)	4.93 (5.13)
Cross-level interactions					
Managerial ESO x UA				-.19** (.04)	
Nonmanagerial ESO x UA				-.67** (.18)	
Managerial ESO x ST					.22 (.13)
Nonmanagerial ESO x ST					1.02** (.31)
-2 Log Likelihood	13,176.39	13,175.62	13,162.31	13,152.46	13,158.54
Pseudo R <sup>2</sup>	.30	.30	.34	.35	.34

Note.  $N = 1,741$  observations; 21 countries. ESO: employee stock ownership; ROA: return on assets; ST: social trust; UA: uncertainty avoidance.

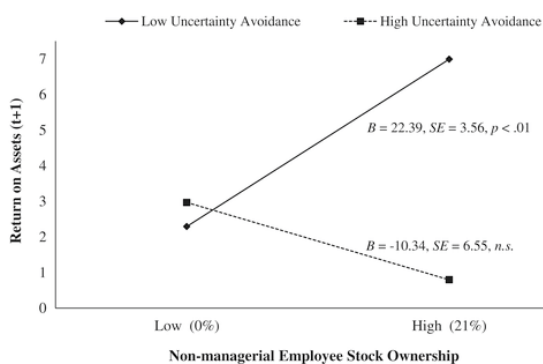
\*\*  $p < .01$

\*  $p < .05$ .

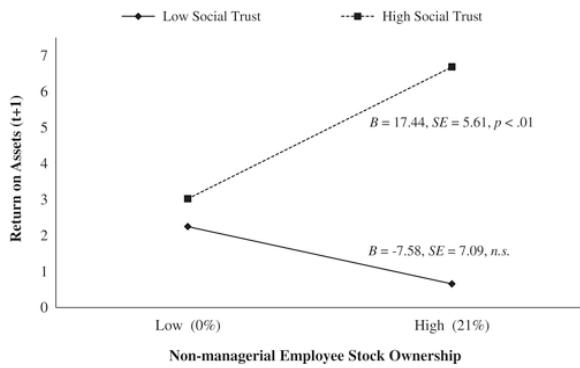
To advance our interpretations, we plotted these interaction effects in Figures 4, 5, and 6. Simple slope analyses further confirmed both managerial and nonmanagerial employee stock ownership have a positive association with ROA in countries with low uncertainty avoidance and high social trust.



**Figure 4.** Interaction effect of managerial employee stock ownership and uncertainty avoidance on subsequent return on assets (ROA)



**Figure 5.** Interaction effect of nonmanagerial employee stock ownership and uncertainty avoidance on subsequent return on assets (ROA)



**Figure 6.** Interaction effect of nonmanagerial employee stock ownership and social trust on subsequent return on assets (ROA)

## 5 DISCUSSION

Building on agency and contingency theories, we sought to identify some of the cultural and societal contexts that may alter the positive linkage between employee stock ownership and financial performance. Our investigation revealed lower uncertainty avoidance and higher social trust amplify the positive linkage between employee stock ownership and ROA. Albeit not hypothesized, our additional analysis found employee stock ownership by the management directly increases ROA and that nonmanagerial employee stock ownership significantly interacts with low uncertainty avoidance and high social trust to increase ROA. Our theories and findings offer several theoretical and practical implications for a complete understanding of the effectiveness of employee stock ownership.

### 5.1 Theoretical implications

The results of this study contribute to the particular realm of employee stock ownership by identifying uncertainty avoidance as an important country-level context that alters the positive linkage between employee stock ownership and financial performance at the firm level. Although prior research has largely indicated that firms can financially benefit from the use of employee stock ownership (Doucouliagos, [1995](#); O'Boyle et al., [2016](#)), that effect size was not compelling, and even negative and null effects were also occasionally detected (e.g., E. Kim & Ouimet, [2014](#); Poulain-Rehm & Lepers, [2013](#)). Given this inconclusive evidence in the literature, researchers in this field have called for more empirical studies on those contextual variables under which employee stock ownership increases or decreases firm performance (Carberry, [2011](#)). Taking into account the financial risk imbedded in employee stock ownership, we theorized that firms in countries with low uncertainty avoidance are likely to financially benefit from employee stock ownership. Our findings support this claim by demonstrating that employee stock ownership increases the financial performance of firms operating their businesses in countries where uncertain situations are endured. This evidence implies that firms in a society with low uncertainty avoidance can improve their profitability by implementing employee stock ownership. Our work highlights that the fit between employee stock ownership and uncertainty avoidance does matter to the financial success of firms.

Our findings on the moderation role of social trust also help clarify the variation in the existing evidence on the linkage between employee stock ownership and performance outcomes. We derived social trust as a clue to address this issue, given that researchers and practitioners are concerned about employee shirking in the context of collective work and incentives (Gerhart, Rynes, & Fulmer, [2009](#)). Social trust represents the average level of generalized trust among citizens in a country. While some studies have suggested employee stock ownership and various forms of collective incentives will activate peer monitoring and thereby suppress employee shirking in a collective work structure (A. Kim, Han, Blasi, & Kruse, [2015](#)), employee shirking has traditionally been a key challenge for collective incentives (Alchian & Demsetz, [1996](#)), which impedes individual



fairness perception as well as organizational effectiveness (Freeman, Kruse, & Blasi, [2010](#)). As we considered employees in countries with high social trust are less likely to be concerned about others' shirking in the workplace under employee stock ownership, we theorized that firms equipped with strong social trust imbued from their national influence are likely to experience improved ROA. We found supporting evidence, implying that social trust fosters a context for realizing the better performance effects of employee stock ownership. Our findings contribute to the employee ownership research as well as the broader compensation literature regarding how to reduce employee shirking (Pendleton & Robinson, [2010](#); Rynes, Gerhart, & Parks, [2005](#)).

Although not specifically hypothesized, our supplemental analysis to confirm the robustness of our findings revealed two intriguing results pertaining to the role levels of employee stock owners (see Table [4](#)). One of them is that employee stock ownership for the management has a direct and positive impact on ROA, whereas employee stock ownership for rank-and-file employees does not have the same effect. This finding makes sense in terms of the line of sight problem, which is a major concern for any collective incentives (Gerhart et al., [2009](#)) and particularly stock-based plans (Conyon & Freeman, [2004](#); see Kaarsemaker et al., [2010](#) for a review). In contrast to individual incentives, collective incentive plans typically lack line of sight due to the free-riding problem (Sesil, Kroumova, Kruse, & Blasi, [2007](#)), and this issue is more severe for employee stock ownership due to the influences of exogenous factors on stock prices (Pendleton, [2006](#)). As a result, if available, stock-based compensation generally takes more portions of annual pay for upper managers than rank-and-file employees (Han & Kim, [2018](#)) because it can motivate upper managers involved in controlling the external factors influencing stock prices relatively more than lower level employees. When it comes to the line of sight, this research thus may support that employee stock ownership is effective in increasing the distal outcomes of firms if it is applied to upper managers. The other is that employee stock ownership for rank-and-file employees more strongly interacts with contextual factors to affect ROA than does that for the management. This evidence implies contextual fit does matter to employee stock ownership for nonmanagerial employees. On balance, these findings may conclude that stock-based plans should be primarily given to management in general but also to rank-and-file employees in certain contexts such as lower uncertainty avoidance and higher social trust at the country level.

Finally, this research enriches the cross-cultural management literature by extending the theoretical lenses to employee stock ownership. Corresponding to the significance of country-level contextual influences in today's global economy, management scholars have asked to what degree management theories and practices can be generalized across different cultures and to what degree new theories and research evidence need to be further developed based on cultural differences. In a similar vein, researchers have called for more studies that incorporate country-level contextual influences into the financial participation models (Gerhart & Fang, [2015](#); Poutsma, Blasi, & Kruse, [2012](#)). Also, the prior research (e.g., K. Y. Kim & Patel, [2017](#)) has suggested that the effectiveness of employee stock ownership may also vary across different countries. In an endeavor to respond to this call and suggestion, we examined whether contextual influences at the national level affect the positive linkage between employee stock ownership and financial performance. We identified uncertainty avoidance and social trust as significant boundary conditions shaped at the national level, and we found lower uncertainty avoidance and higher social trust do promote employee stock ownership to intensify ROA. Our work is among the first to account for unresolved issues pertaining to cross-national differences on the effectiveness of employee stock ownership and still directly tap into the interplay between certain national contextual influences and employee stock ownership when predicting financial performance. Investigating the cross-level influences of national variables on firm functioning is of great significance in terms of advancing a systematic understanding of the effectiveness of managerial practices (Qu & Yang, [2015](#); Rabl et al., [2014](#)). Our theories and findings opened up a scholarly conversation on the cross-cultural comparison of employee stock ownership effectiveness.



## 5.2 Practical implications

In a global economy, an important research question is whether a managerial practice that works in one country (e.g., United States, United Kingdom) can work the same in other countries (e.g., France, Germany). Managerial practices, such as incentives, may not necessarily work the same everywhere, but instead, the outcome may depend on their fit with the local cultural environments (Janssens et al., [1995](#); Newman & Nollen, [1996](#)). We specifically estimated the practical significance of the effect of employee stock ownership on financial performance by calculating the impact of a one-*SD* increase in the use of employee stock ownership on ROA. With all the other variables held at their means, an increase of one *SD* in employee stock ownership from the mean was associated with a 1.01% point increase in ROA from the mean of 2.67% to 3.68%. In countries with low uncertainty avoidance, an increase of one *SD* in employee stock ownership was associated with a 2.04% point increase in ROA from the mean of 2.67% to 4.71%. Similarly, an increase of one *SD* in employee stock ownership was associated with a 1.74% point increase in ROA from the mean of 2.67% to 4.41% in countries with a high level of social trust. Our findings and estimated effect sizes can guide managers to consider cultural values and societal contexts in their global locations whenever they need to make a better decision regarding the implementation of employee stock ownership.

## 5.3 Limitations and future avenues

Our study has several limitations that future research may need to address. First, this study only examined uncertainty avoidance and social trust as potential country-level moderators in the relationship between employee stock ownership and financial performance. Although we carefully chose those country-level moderators based on agency theory and employee stock ownership literature (i.e., uncertainty avoidance and social trust are closely related to risk aversion and free-riding problems, respectively), other country-level differences may also be relevant. For example, European countries have different levels of support for adoption and diffusion of employee stock ownership. Indeed, the mean level of employee stock ownership by country in our sample was highest in France (0.13 in Table [1](#)), where the government encourages collective incentive schemes to promote employee savings, broader distribution of wealth, and wage flexibility (Poutsma et al., [2006](#)). This government support could influence not only adoption and diffusion, but also performance of employee stock ownership. In this sense, future studies may want to examine other institutional factors, such as countries' legal (e.g., common law vs. civil law), economic (e.g., varieties of capitalism), and political (e.g., political stability) differences.

Second, we assigned uncertainty avoidance and social trust scores based on the country where the firm (headquarters) is located. However, the international character of a company can undermine the effects of national cultures. For example, the sample for this study may contain multinational companies (MNCs) with subsidiaries in other countries. Although prior research has shown MNCs transfer the home country practices and values to their subsidiaries (Bae, Chen, & Lawler, [1998](#); Ferner, [1997](#); Myloni, Harzing, & Mirza, [2004](#)), they are also likely to be affected by the international character of the firm (e.g., cultural values of the countries where their subsidiaries are located). Unfortunately, we were not able to control for international character of the firm due to data nonavailability. We encourage future research to examine the effects of internationalization of the firm on the effectiveness of employee stock ownership.

Third, we focused on only one type of organizational outcome (i.e., ROA) of employee stock ownership, due to our research goal and data availability. ROA is considered one of the most appropriate performance measures in ownership structure research as it represents the profitability of a firm in which shareholders are most interested (Demsetz & Villalonga, [2001](#); Mehran, [1995](#); Richard et al., [2009](#); Thomsen & Pedersen, [2000](#)). As financial performance is a distal outcome, however, there has been a growing consensus that employment practices drive the distal performance of firms through intermediate outcomes, such as employee attitudes and behaviors (Bowen & Ostroff, [2004](#); Dyer & Reeve, [1995](#); Guest, [1997](#)). Indeed, empirical studies found employee

stock ownership is positively related to employees' organizational commitment, job satisfaction, and information sharing and is negatively related to turnover intention, voluntary turnover, and grievance rate (Blasi et al., [2016](#); Buchko, [1993](#); French & Rosenstein, [1984](#); Klein, [1987](#); Long, [1980](#)), which could ultimately influence organizational performance. As such, we encourage future researchers to investigate the mediating mechanism through which employee stock ownership affects financial performance.

## 6 CONCLUSION

Our study is among the first to systematically examine whether national level influences (i.e., uncertainty avoidance and social trust) yield variation in the effect of employee stock ownership on financial performance. Analyzing a multisource, time-lagged large-scale dataset of European large listed companies, we found an overall positive relationship between employee stock ownership and ROA. More importantly, our analysis substantiated that this relationship was more strongly positive for firms operating their business in counties with low uncertainty avoidance or high social trust. We hope the results of this research not only advance the field of employee stock ownership in terms of a contextual fit, but they also offer valuable practical information to better leverage employee stock ownership, which in turn benefits both employers and employees.

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